

UTAH SAFETY BELT OBSERVATIONAL SURVEY

SEPTEMBER 2008 REPORT

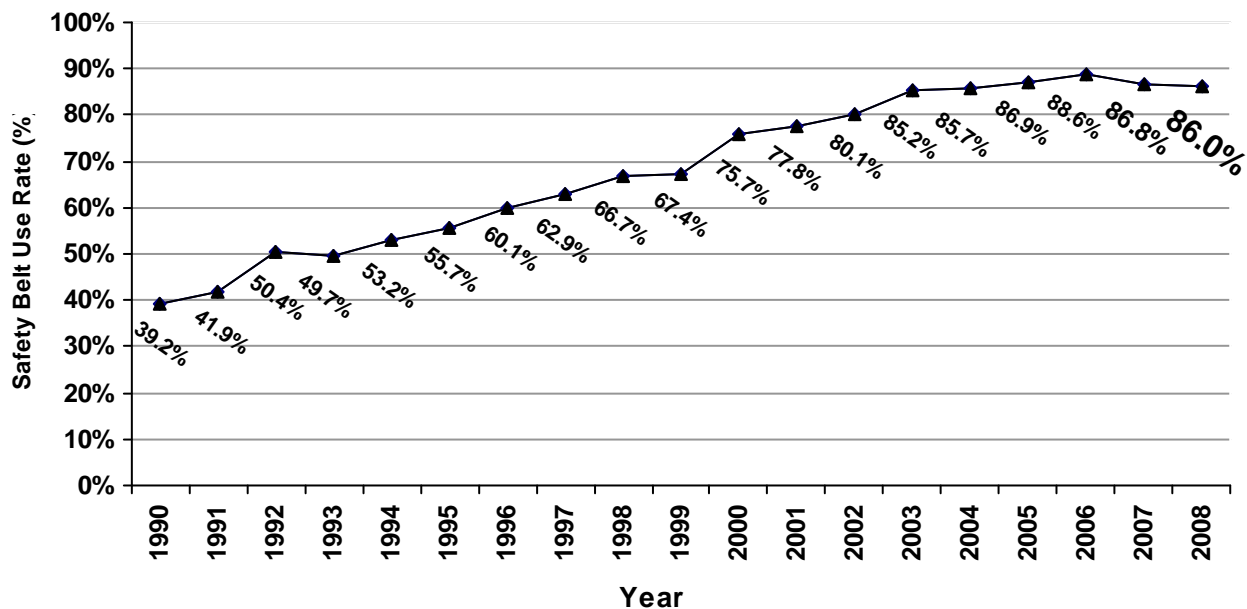
INTRODUCTION

According to the National Highway Traffic Safety Administration (NHTSA), deaths and serious injuries caused by motor vehicle crashes could be reduced by approximately 50% with proper and consistent use of safety belts. To help increase safety belt use, traffic safety advocates have used a combined approach which involves legislation, public information and education efforts, and enforcement.

In 1986, the first Safety Belt Use Law was enacted in Utah. The law has gone through several revisions throughout the years and currently states that all drivers and passengers must use safety belts. The law is secondary for people ages 19 and older and primary for people under 19 years of age. In addition, during the 2008 legislative session, the child restraint law was upgraded and now requires that children under the age of eight must be restrained in an appropriate child safety seat or booster seat.

Educational and enforcement programs are also used to increase awareness of the importance of safety belts. Public education activities include training, presentations, media campaigns, and high visibility enforcement efforts. These activities are conducted by the Utah Highway Safety Office (UHSO), state and local health departments, hospitals, law enforcement agencies, fire/EMS, businesses, and other partnering agencies committed to making Utah's roads safer. To determine the effectiveness of these legislative and preventative efforts, a survey has been conducted each year since 1986 to measure safety restraint usage rates. The survey results show that these efforts have been effective in increasing safety belt use. Utah's safety belt usage rate has increased from 18% in 1986 to the current rate of 86.0% (Figure 1).

**Figure 1: Observational Safety Belt Use
of Drivers and Front Seat Passengers
(Utah 1990-2008)**



BACKGROUND

From 1986 to 1998, the methodology for conducting safety belt observational surveys was based on guidelines specific to Utah. In 1998, the National Highway Traffic Safety Administration (NHTSA) began to award the states federal funds based on their statewide safety belt use rates and established new survey criteria. In turn, the states were required to develop new methodology that was approved by NHTSA, which included studying safety belt use in the largest geographic areas containing at least 85 percent of the state's population. In Utah, this meant that safety belt usage would be studied in the six most populated counties (Cache, Davis, Salt Lake, Utah, Washington, and Weber). This annual study provides NHTSA with a state safety belt usage rate and is also used to help establish a national rate, which was reported as 83% in 2007.

The criteria directed that a state survey must be: probability based; based on observed shoulder belt use; designed to produce estimates with a relative precision of +/- 5 percent; designed to study front seat passengers of all passenger vehicles during all daylight hours for all days of the week; designed to include the largest geographic areas containing at least 85 percent of the state's population; and properly documented.

NHTSA continues to require states to follow the survey guidelines, as results are used to help determine the national use rate. Beginning in 2003, states were required to conduct the survey in June, which marks the conclusion of the national high-visibility enforcement campaign, *Click It or Ticket*. By conducting the study during this time period, Utah is able to determine the highest possible safety belt usage rate for the year and evaluate the effectiveness of the *Click It or Ticket* effort.

METHODOLOGY

Sample Stratification: Utah encompasses an area of 84,916 square miles, and had a population of 2,233,169 in the 2000 census. The state has a varied geographic distribution of its population with large rural and frontier areas. Over 76% of Utah's population lives within four counties clustered against the Wasatch Mountains. This leaves the remaining 25 counties with less than 24% of the population. Based on national criteria to exclude no more than 15% of the state's population, the six most populated counties (Cache, Davis, Salt Lake, Utah, Washington, and Weber) were selected for the survey.

Sample Selection: Road segments were defined by data from the Utah Department of Transportation. It was determined that there was an average of 282 road segments in each of the six sampled counties. Through random selection, 27 state road segments in each county (162 total) were selected for observation. The 27 road segments within each county were defined as rural or urban roadways and were randomly selected with probabilities of selection corresponding to vehicle miles traveled.

Day of Week and Time of Day: Day of the week, time of day, and direction of travel were randomly selected for each road segment. In addition, no more than six sites were selected for a 40-minute observation in a single day. All time periods were during daylight hours, starting at 7:30 AM and ending at 4:30 PM. To minimize travel time, sites were grouped into geographic clusters.

Sample Size: To determine sample size, based on previous surveys, it was estimated that approximately 15,000 observations would need to be acquired from the 162 sites for a single survey in order to meet the required accuracy of an approximate margin of error of less than 1%, at a 95% confidence level.

Data Collection: Each site included a specific road segment using a mile post, time of day, day of week, and direction of travel. All passenger cars, pickup trucks, vans, and sport utility vehicles were observed for a period of 40 minutes at each site. Commercial trucks and motor homes were excluded. Only drivers and front passengers were observed. All lanes of traffic traveling in the predetermined direction of travel were observed. Observers were trained using a Field Observer's Instruction Manual and were provided with survey observation forms and information on each of the 162 sites to help locate the exact location to be observed.

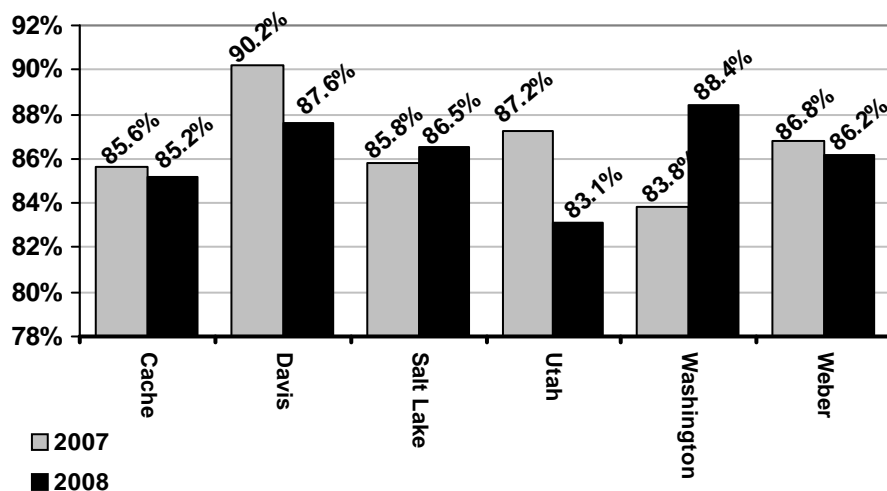
Statistical Analysis: Completed data collection forms were returned to the UHSO where the data was entered into an electronic format and provided to a statistician for analysis.

Child Restraint Survey Methodology: The NHTSA does not require states to conduct child restraint observational studies and does not provide criteria or approve methodology for conducting these studies.

To ensure the results are accurate, the UHSO chose to follow the safety belt survey guidelines established by NHTSA in 1998. The Child Restraint Survey followed the same guidelines except for:

- children ages 0-4 were observed for child safety seat use and children ages 5-10 were observed for child seat OR safety belt use;
- only local roadways with speed limits of 40 miles per hour or less were selected;
- child restraint and safety belt surveys were not conducted on the same day;
- all seating positions in the vehicle were eligible for observation if the surveyor could positively identify restraint use or non-use.

**Figure 2: Safety Belt Usage by County
Utah (2007-2008)**



RESULTS—ADULT SURVEY

The results of this study show the overall safety belt use rate for Utah as well as the use rate by county, gender, and road type. A total of 56,035 drivers and front seat passengers were observed. Overall usage was **86.0%**, which has a margin of error of $\pm 0.29\%$.

Unfortunately, for the second consecutive year, Utah's safety belt use rate has shown a decline. The 2008 rate dropped 2.6 percentage points since 2006. The study also revealed that four of the six counties surveyed decreased their usage rates from the previous year. Figure 2 shows the 2007 and 2008 safety belt usage rates for the six counties.

TABLE 1: SAFETY BELT USE AMONG MALE AND FEMALE OCCUPANTS BY COUNTY (2007-2008)

County	MALE OCCUPANTS		FEMALE OCCUPANTS	
	2007	2008	2007	2008
Cache	82.2%	82.3%	89.9%	88.8%
Davis	87.9%	85.1%	92.9%	90.3%
Salt Lake	84.0%	84.4%	88.3%	89.6%
Utah	85.0%	80.7%	89.8%	86.1%
Washington	81.3%	85.9%	87.1%	91.8%
Weber	83.8%	83.6%	91.1%	89.8%
Overall	84.2%	83.7%	90.1%	89.4%

Gender by County

Females were more likely to wear safety belts than males. Females buckled up 89.4% of the time, whereas 83.7% of males used seat belts. The results for safety belt usage among male and female occupants in 2007 and 2008 are summarized by county in Table 1.

Road Type by County

More people used safety belts while traveling on highways when compared to local roadways. On highways, 87.6% of people used seat belts, whereas 85.0% of people buckled up on local roadways.

Table 2 provides the safety belt use rates for both local roadways and highways for each county. The table does not include a usage rate for highways in Cache County since the Utah Department of Transportation's roadway database does not show any major highways in that county. All roads selected for observation in Cache County were considered to be local.

TABLE 2: COUNTY SAFETY BELT USE BY ROAD TYPE (2008)

County	Local Roadway	Highway
Cache	85.2%	N/A
Davis	87.8%	87.4%
Salt Lake	85.2%	90.0%
Utah	83.7%	82.7%
Washington	83.9%	91.9%
Weber	84.0%	88.7%
Overall	85.0%	87.6%

CHILD RESTRAINT SURVEY

Background

The UHSO has conducted child restraint observational studies since 1984. The ages of children observed in these studies has varied throughout the years in order to mirror changes in Utah's safety restraint law and national child passenger safety guidelines. One significant change to Utah's law occurred in 2000, when legislators voted to upgrade the law to make child safety seat use mandatory for children through age 4. In 2008, Utah's law was upgraded to require children up to age eight to ride in an appropriate child safety seat or booster seat.

Again, changes to the child restraint survey methodology were made as the state's law improved. A brief history of these changes are as follows:

- between 1984—1990, children under the age of five were observed for child safety seat or safety belt use;
- from 1991—1997, children ages 0-2 were observed for child safety seat use and children 2-8 were observed for safety seat or seat belt use;
- surveys conducted in 1999 and 2001 observed children up to age 10. Children ages 0-2 were observed for child safety seat use and children ages 3-10 were observed for safety seat or seat belt use;
- surveys conducted in 2003, 2004, 2006, and 2008 observed children ages four and younger for child safety seat use and children ages 5-10 for child seat or safety belt use;
- child restraint usage was not studied in 1998, 2002, 2005, and 2007 due to timing and funding constraints.;
- due to the changes in the observed age groups for child restraint use, it is difficult to compare later studies with earlier ones.

Results

In 2008, 4,102 children under the age of 10 were observed for safety restraint use. The use rate for this age group was **91.9%**. This demonstrates a decrease of one percentage point from the 2006 rate of 92.9% (see Figure 3).

Safety restraint usage decreases as children grow. The 2008 survey results show that **93.1%** of children under five years were restrained in a child safety seat, whereas only **88.0%** of children ages 5-10 were restrained in a safety seat or seat belt (see Figure 4).

**Figure 3: Child Restraint Usage Rate
Utah - *Ages 0 to 10**

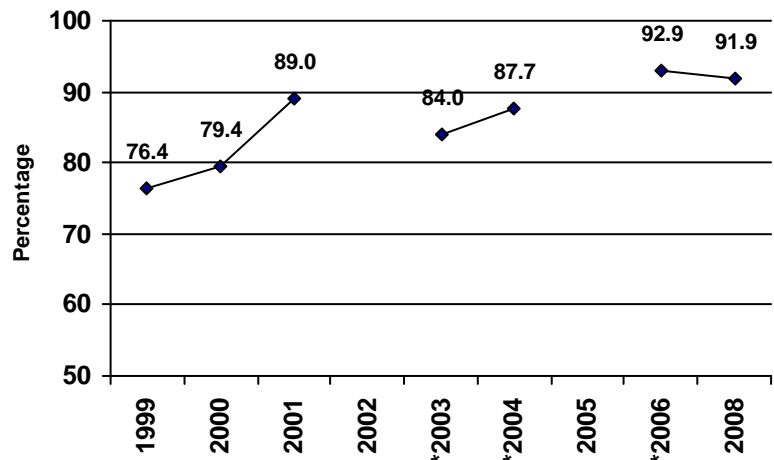
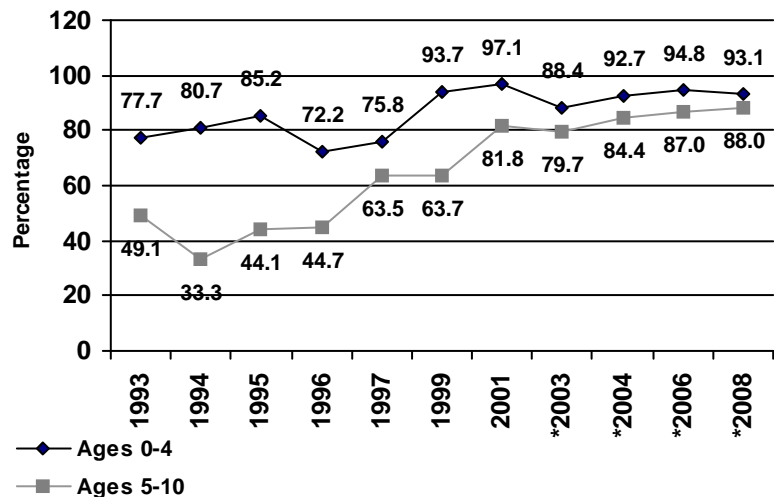


Figure 4: Child Restraint Usage Rate in Utah

**Ages 0-4 vs. 5-10 Years
(the above age breakdown applies to the 2003-2008 studies only)*



Of the six counties surveyed, two showed increases in child restraint use from 2006. Table 3 displays use rates by age group for each of the six counties surveyed. It also provides the rates for 2006 and 2008 for comparison.

CONCLUSIONS

Adult Safety Belt Use

- The weighted statewide result for 2008 is 86.0% +/- 0.29%.
- For the second consecutive year, Utah's safety belt use rate has shown a decline. The 2008 rate has dropped 2.6 percentage points since 2006.
- The decline in safety belt usage is due to drops in four of the six counties surveyed.
- Among the six counties observed for the study, Washington County went from worst in 2007 to best in 2008 while Utah County dropped to worst in 2008 from highest in 2007.
- Seat belt use improves to 88.4% (+4.6%) in Washington County.
- On highways in Utah County, use dropped 7 percentage points to 82.7%.
- Use on highways in Washington County increased 4.6 percentage points to 91.9%.
- Use of local roads rose 4.4 percentage points in Washington County to 83.9%.
- The largest increases in use among male and female motorists were seen in Washington County, with increases of 5 percentage points in each group.
- The largest drops in use among male and female motorists occurred in Utah County, with 4 percentage point declines in both groups.

Child Restraint Use

- In 2008, the weighted statewide safety restraint use rate for children age 0 to 10 is 91.9%, which is not considered a statistically significant decrease from the 2006 rate of 92.9%.
- Child restraint use among children age 0 to 4 declined to 93.1% in 2008 from 94.8% in 2006. Whereas, safety restraint usage among children age 5 to 10 increased from 87.0% in 2006 to 88.0% in 2008, although this increase is not statistically significant.
- The safety restraint use rate among children age 0 to 4 and children ages 5 to 10 is highest in Salt Lake County (98.2% and 96.1% respectively).
- The safety restraint use rates among children in Washington County improved by 5.1 percentage points overall, and an astounding 11.7 percentage points among children ages 0 to 4.
- In Utah County, use among children ages 0 to 4 dropped 6.3 percentage points, which was the largest decline seen among the counties surveyed.

TABLE 3: COUNTY SAFETY RESTRAINT USE AMONG CHILDREN BY AGE (2006, 2008)				
County	Age	2006	2008	% Change
Cache	0-4 Yrs	94.5%	94.4%	- 0.1%
	5-10 Yrs	85.9%	88.1%	+ 2.2%
	Total	89.3%	90.3%	+ 1.0%
Davis	0-4 Yrs	95.0%	93.1%	- 1.9%
	5-10 Yrs	89.1%	87.6%	- 1.5%
	Total	91.7%	90.1%	- 1.6%
Salt Lake	0-4 Yrs	99.4%	98.2%	- 1.2%
	5-10 Yrs	96.0%	96.1%	+ 0.1%
	Total	97.8%	97.0%	- 0.8%
Utah	0-4 Yrs	97.6%	91.3%	- 6.3%
	5-10 Yrs	84.4%	88.3%	+3.9%
	Total	89.6%	89.6%	+/- 0%
Washington	0-4 Yrs	82.0%	93.7%	+ 11.7%
	5-10 Yrs	80.8%	83.2%	+ 2.4%
	Total	81.4%	86.5%	+ 5.1%
Weber	0-4 Yrs	94.0%	89.0%	- 5.0%
	5-10 Yrs	83.5%	82.7%	- 0.8%
	Total	87.1%	85.5%	- 1.6%
Overall		84.4%	92.9%	- 1.0%

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